

Appl. No. : 09/936,257
Filed : January 11,2002

REMARKS

In the Office Action mailed March 18, 2004, the Examiner rejected Claims 22-31 and allowed Claims 32-38. In the present Amendment and Response to Final Office Action, Applicants have amended Claim 22. Applicants respectfully request entry of the amendments and full consideration of the remarks contained herein.

Allowable Subject Matter

Applicants note with appreciation that Claims 32-38 have been allowed. Applicants would like to thank the Examiner for the allowance of these claims.

Amendments to the Claims

Applicants have amended the claims to further clarify the subject matter that Applicants regard as the invention. In particular, independent Claim 22 has been amended to recite that "all said gas-introduction holes are arranged outside of said grooves." Support for this amendment can be found in the Application as originally filed. *See, e.g.*, the Application, pp. 2 and 4 and Figure 2, as originally filed. Accordingly, Applicants respectfully submit that the amendment adds no new matter and is fully supported by the application as originally filed.

No New Issues

Applicants note that the present amendment simply incorporates into independent Claim 22 a limitation already inherently present in dependent Claim 25. In particular, Applicants note that dependent Claim 25 recites that "said gas-introduction holes are arranged next to said spiral shaped grooves." In order to be next to the grooves, it is implicit that the gas-introduction holes cannot be inside the grooves; they are necessarily arranged outside of the grooves. As a result, because the amendment merely incorporates a limitation already present in a dependent claim into an independent claim, Applicants submit that the amendment raises no new issues.

Accordingly, Applicants respectfully request entry of the amendment.

Rejections Under 35 U.S.C. § 103

The Examiner has rejected Claims 22-31 under 35 U.S.C. § 103(a) as being unpatentable over Frijlink (U.S. Patent No. 4,860,687) and Granneman et al. (U.S. Patent No. 6,183,565). The

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Examiner stated that Frijlink teaches, among other things, a “device for rotating disk type objects while floating on gas in a reaction chamber,” the device having “gas introduction holes at the origin of spiral grooves (Fig 5b and Col 6 lines 13-50).” The Examiner noted, however, that Frijlink does not teach top and bottom parts that enclose the substrate and each have gas introduction holes. Granneman et al. is asserted to satisfy this deficiency.

Applicants respectfully submit that the claims, as amended herewith, are patentably distinct.

Initially, Applicants note that Claim 22 recites a reactor having “a top part and a bottom part” and that “a pattern of grooves is arranged in the surface of said top part.” Moreover, Claim 22 has been amended to recite that “all said gas-introduction holes are arranged outside of said grooves.” (emphasis added). In contrast, as noted by the Examiner, Frijlink teaches throughout its disclosure that gas introduction holes are located inside various grooves, near the origins of these grooves. *See, e.g.*, Frijlink, Col. 5, line 55 to Col. 6, line 34, Col. 8, lines 32-35, Col. 9, lines 16-18 and Figures 5a-5c, 7a and 8. As such, Applicants submit that Frijlink does not teach an arrangement in which “all said gas-introduction holes are arranged outside of said grooves,” as recited by independent Claim 22. Moreover, Granneman et al. does not satisfy this deficiency. Thus, Applicants respectfully submit that the combination of Frijlink and Granneman et al. does not teach all limitations of independent Claim 22. Consequently, Applicants submit that Claim 22 is not obvious in view of the art of record.

Rather, Applicants note that only the present Application discloses an arrangement of grooves and gas introduction holes that advantageously decouples the rotation generated by the grooves from the rate that gas flows out of the gas holes. Desirably, with this arrangement, the exact shape of the groove can be selected based upon the desired rotational speed, while the rate of gas flow into the chamber can be optimized for optimal flotation and economy of gas usage. *See, e.g.*, page 2 of the Application. As a result, rotation and gas flow rates can each be independently optimized for a particular process. Among other things, this allows a minimum of gas to be flowed into the reactor to support a wafer, while still allowing sufficient rotation of the wafer during processing. Applicants submit that the art of record neither teaches nor suggests the recited arrangement of grooves and gas introduction holes, nor the advantages of such an arrangement.

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Accordingly, Applicants submit that the pending claims are allowable over the art of record. Applicants have not addressed the further rejections of dependent claims as being moot in view of the amendments and remarks herein. However, Applicants expressly do not acquiesce in the Examiner's findings not addressed herein. Indeed, Applicants submit that the dependent claims recite further nonobvious features of particular utility.

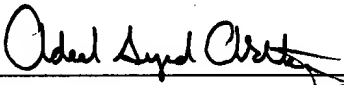
CONCLUSIONS

In view of the foregoing amendments and remarks, Applicants request entry of the amendments and submit that the application is in condition for allowance and respectfully request the same. If some issue remains which the Examiner feels may be addressed by Examiner's amendment, the Examiner is cordially invited to call the undersigned for authorization.

Respectfully submitted,

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